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UPDATE ON EUS DIAGNOSTICS, INFECTION TRIALS AND ONLINE SLIDE COLLECTION

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Abstract:

Following the presentation with an update on growth and sporulation of *Aphanomyces invadans,* by Christian Fry at last year's annual meeting, we have conducted a series of infection trials. These infection trials have had several functions, both to establish an infection model in our laboratory and getting experiences in this context, but also to use the fish for performing diagnostic procedures from clinical cases, and to collect positive tissue material from infected fish.

We performed a pre-trial with three different species of gourami's: three spot gourami, pearl gourami and dwarf gourami. Each fish was intramuscularly injected with 1600 spores in 10 µl of miliQ water. We observed that 3 out of 9 three spotted gouramis got clinical diseased, none of 4 pearl gouramis got diseased and all of 5 dwarf gouramis got diseased. From this we chose to use the three spotted gouramis as the fish of choice, to include as positive control of the pathogenicity of injected spores.

Secondly we set up a confirmatory trial in three spotted gouramis, here it was also seen that around a third of the fish got clinically diseased. From these and later trials it is our experience that using *A. invadans* grown on agar, around a third of the threspotted gouramis will show clinical disease ranging from 2-5 fish, some of these might resolve the lesion within a couple of weeks. Further, using an *A. invadans* reisolated from a three spot gourami we have seen 100% morbidity. In contrast, using an *A. invadans* reisolated from a rainbow trout, with clinically disease, resulted in no mortality in 10 three spotted guramis, with only one fish showing a slight reddening.

We have performed intra muscular injection trials in rainbow trout at temperatures at 10, 15, 18 and 22 degrees Celsius respectively. Here we have seen variable morbidity; at 10 degrees Celsius we have not observed any symptoms, at 15 degrees Celsius we have seen a few fish with clinical disease, at 18 degrees Celsius up to 70 % have been clinically affected and at 22 degrees Celsius almost 100% morbidity was seen. This shows that rainbow trout can support fungal growth and develop lesions at temperatures present in European rearing conditions, however, at the predominant temperatures, for rearing salmonids in Europe, disease and lesion development most likely will be to a limited degree. Moreover, our preliminary results indicates that Oomycal growth in rainbow trout don't support a normal pathogenic potential of the organism, but an attenuated strain with lower virulence.

Following the above described trials we have collected material for histology, Oomycete reisolation and PCR. From this material, pictures will be uploaded to the EURL website. The pictures will show different types of lesions using standard H&E stain and special stains, explanatory text will follow each picture. First we will upload tissue from infected Gouramis, following this; pictures of lesions in rainbow trout.